Apparatus and Method to Handle Power Supply Failures for a Peripheral Device

ABSTRACT

A method and apparatus to handle power supply failures to a peripheral device in a data processing system. One embodiment of the invention involves a method to handle a power failure during the performance of a task, wherein the peripheral device receives electrical power from a power supply, and the peripheral device is part of a data processing system that also contains a non-volatile memory. The method includes monitoring the power supply to determine whether the electrical power is going from "on" to "off," or going from "off" to "on." If the electrical power is going from "on" to "off," the method includes examining a task queue for the peripheral device to find at least one task; calculating the amount of electrical energy required for the task; performing the task if sufficient electrical energy remains available to the peripheral device to complete the task; and storing data describing the task in a task queue in the non-volatile memory if insufficient electrical energy remains available to the peripheral device to complete the remaining task. A second embodiment of the invention involves a data processing system that handles power failures. The data processing system includes an electrical detection circuit to determine whether the electrical power is going from "on" to "off," or changing from "off" to "on;" a peripheral device, including a processor to calculate the amount of electrical energy required for the peripheral device to perform a task; a task queue for the peripheral device that can be read to find a task if the electrical power is going from "on" to "off;" and a non-volatile memory, including a task queue to store data describing the task if insufficient electrical energy remains available to the peripheral device to complete the task.